

REMARKS

Reconsideration of the outstanding Office Action is respectfully solicited.

The present application does not intend to seek protection for mono-base, di-base, or tri-base powders, but for a method for the surface treatment of propellant powders (mono-, di- or tri-base propellants) for the ammunition used in barrel weapons.

For the purpose of narrowing the issue, Applicants have forwarded four photographs, as Figures, for the Examiner's consideration, along with a translation of the legends. Thus, 8 sheets of photographs (Figures) are attached. The coating in Applicants' case is not uniformly distributed (in particular, it is not in the form of a mixture), but is present as a surface layer on the propellant powder grain and the combustion channels (see enclosed Figures 1 to 3).

The object of the method is the production of propellant powders for which, in a simple manner, a flattening of the maximum gas-pressure curve is achieved in the temperature range allocated to the weapon. Drawings of the application and the results of the Examples show that the effect of Applicants' coating is to improve performance at low and normal temperatures by decreasing the gradient of temperature and pressure. In fact, scrutiny of Figures 1 and 2 reveals that the initial changes at lower temperatures causes a slope difference of positive (for coated granules of the invention) compared to a negative slope (for uncoated granules).

Revision of U.S. main Claim 43 emphasizes that the claims refer only to the coating of the powder grains shown in the Figures. To narrow the issue, Applicants also delete the dependent claims 44 and 45.

Applicants wish to stress that the PTO statements concerning the cited reference to Willer ('325) is not relevant to the claims under scrutiny.

The method disclosed in column 8 of the Willer reference does not relate to a propellant powder grain surface treatment, as defined in Applicants' claims, and as shown in the enclosed Figures 1 to 3. Rather, the Willer '325 method relates to mixing a powdery ammonium nitrate with other materials. An essential difference between Applicants' claims and Willer '325 is that the ammonium nitrate in Willer is present in a powdery form, as shown in Figure 4, and that, in Willer's case, a material with uniform composition is produced and no surface coating is described or suggested. The same holds true for "Lutz" and "Menke" which provide a homogeneous composition of a propellant charge.

Applicants cannot agree with the U.S. Examiner's explanations concerning "O'Meara" and "Lutz" because "Lutz" does not provide any reference to a propellant grain coating in any shape or form and only discloses homogeneous propellant charge, for example with Alcylnena.

With respect to "Lutz" and "O'Meara," Applicants wish to emphasize the following information:

The U.S. Patent to O'Meara (5,682,009 – column 1, line 37, *et seq.*) relates to a particulate 10 in which is dispersed as a deterrent. Suitable deterrents include polyvinyl acetate, polystyrene, polyethylene, polyisoprene, and cellulose acetates. These contain different materials. In addition, O'Meara relates that "to enhance flow, the particulates may be coated with graphite, (column 5, lines 55-60). The resulting structures of Applicants' claims does not follow from the O'Meara reference. None of these materials is relevant to Applicants' claims.


New Claim 43 is also new, as compared to the cited reference to Lutz (U.S. 5,520,757) because this reference discloses a fundamentally different method. The object of the Lutz method is the production of a base material for the propellant powder, and is not directed to the surface treatment for influencing the combustion behavior. Applicants claim the use of nitro ethyl nitramines as surface coating means in different powder formulations. The cited reference does not provide any suggestion to the treat of propellant powder surfaces.

The U.S. Patent to Willer (5,801,325) furthermore relates only to the composition of a propellant powder as a propellant, for which no plasticizer is claimed. In contrast, Applicants' new main Claim 43 is to claim a method for the surface treatment of granules.

Reconsideration of the outstanding Office Action and an early allowance of the application are respectfully solicited.

Respectfully submitted,

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